

# Reductions in Criminality Subsequent to Group, Individual, and Family Therapy in Adolescent Residential and Day Treatment Settings

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## ABSTRACT

*The complete population of adolescents in a residential and day-treatment program over a 4-year period, 532 youths, served in two studies. Along with residential and day-treatment settings, predictive variables of interest were the number of hours spent in group, individual, and family therapy. A total of 227 adolescents qualified for Study 1 which found a reduction of rates of criminal charges from pre- to posttreatment. Study 1 also found that hours in group therapy explained the most variance in the reduction in rates of criminal charges, followed closely by hours in individual therapy. Hours in family therapy was not a significant predictor. A total of 430 adolescents qualified for Study 2, which found that residential treatment was associated with greater reductions in adult correctional commitments than day treatment. Implications stress the need for further research examining the relationships between therapeutic components of residential treatment and behavioral outcomes.*

**T**he residential treatment of adolescents has occurred within the context of juvenile justice, social service, and mental health practice for decades (Brown

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& Hill, 1996). The research literature on the outcomes of residential treatment includes meta-analysis (Garrett, 1985) and other types of review articles (Bates, English, & Kouidou-Giles, 1997; Greenwood, 1994). There have not been consistent and conclusive findings about the effectiveness of residential treatment, or which specific elements of residential treatment programs contribute to successful outcomes.

Studies of residential treatment outcome sometimes rely on instrument-based data. These data include established psychometric measures, such as the Child Behavior Checklist (Joshi & Rosenberg, 1997), and observations of client behaviors using a uniform point system (Ansari, Gouthro, Ahmad, & Steele, 1996). Few studies use instrument-based approaches for appreciable follow-up periods. They rely on assessment at discharge from treatment as indicators of outcome.

Questions of external validity arise in instrument-based studies. First, such studies typically examine one component of the residential treatment process, often one introduced by the investigator. The component is usually not intrinsic to the treatment process before or after the presence of the investigator. This type of study does not usually examine other naturally occurring components of residential treatment in any detail. Second, the results may not generalize well to the variety of youths in residential treatment settings. It is possible that the youths in residential treatment centers who volunteer to be participants in a treatment study have considerably different characteristics than youths who decline to participate. Additionally, instrument-based results cannot represent the societal impact of treatment for delinquent adolescents. Measures of behavior in society, such as rates of criminal charges, are more indicative of the societal impact of services.

Another type of study tends to use groups of youths that exist in the environment of residential treatment centers. These studies enjoy the generalizability benefits of studying the naturally occurring outcomes of residential treatment. These studies are typically less obtrusive in their design than the more experimental and instrument-based studies; the studies often contain data concerning recidivism. Garrett (1985) and Greenwood (1994) have noted that definitions of recidivism, and the duration of follow-up periods in these studies, remain inconsistent. Many of these studies attend exclusively to recidivism outcome and do not examine the relationships between existing components of the residential treatment process and the observed outcomes.

Despite the internal validity concerns of such endeavors, it is important to study the results of existing programs. It is likewise important to better understand the relationship between naturally occurring therapy

components of programs and societally relevant behavioral outcome measures. The present study strives to increase our understanding of the outcome of residential treatment for adolescents in four ways. First, an actual treatment program and its naturally existing therapeutic components was the setting for the study. The full population of clients served in the program during a 4-year period served as the study sample. Second, the outcome measure was derived from rates of criminal charges, and changes in those rates. Third, a long follow-up period was employed with some youths being tracked into early adulthood. Fourth, the study examined the relationship between some of the naturally occurring components of treatment and rates of criminal charges.

## **GENERAL METHOD**

### **Design**

This report contains two distinct studies. Study 1 examined the pre- and posttreatment arrest rates of youths treated at the Adolescent Residential Treatment and Education Center (ARTEC) of Valley Mental Health in Salt Lake City, Utah. Study 2 described the rates of adult criminal convictions for individuals treated at ARTEC as youths.

### **Data**

Archival data was used in both studies. All individuals served within the residential and day-treatment ARTEC programs between March 1991 and February 1995 were identified through the Valley Mental Health (VMH) database. This was the full population of ARTEC clients for the 4-year period. These individuals' names were cross-referenced within the Utah Juvenile Court database. Their juvenile court records were used in Study 1. The names of individuals who had turned 18 at the time of the study were cross-referenced within the Utah Department of Corrections (UDC) database. Their adult justice custody records were used in Study 2.

The process of gaining access to database information involved three steps. First, human subjects approval was obtained from the Institutional Review Board (IRB) of the Utah State Department of Human Services (DHS). The Utah DHS assumes responsibility for minors served by the state's Division of Child and Family Services and the Division of Youth Corrections. Specific approval from this agency facilitated access to information. Second, the Utah Juvenile Court Administrator approved ac-

cess to juvenile court records. Third, the Research and Planning Director for the Utah Department of Corrections also approved database access. Presenting IRB approval from the agency responsible for most of the youths in the ARTEC program was highly instrumental in accessing the database information for these studies.

### **Subjects**

The archival data was drawn from 532 former clients of the ARTEC program, located in Kearns, Utah, a suburb of Salt Lake City. Subjects were 12 through 17 years of age during the course of their ARTEC treatment. Although subjects were referred from various locations in Utah, including some rural areas, the majority of ARTEC clients are referred from the greater Salt Lake metropolitan area. Some subjects met the inclusion criteria for both Studies 1 and 2.

The inclusion criteria for Study 1 was that the subject had juvenile court records in the Utah Juvenile Court database. Of the 532 original subjects in the pool, 227 (43%) met this criteria and were included in Study 1. Of these 227 subjects, 163 (72%) had some type of criminal charge prior to treatment, as reflected on their juvenile court record. Only 64 of 227 subjects (28%) had no criminal charges filed against them prior to treatment. These 64 subjects had pretreatment juvenile court records that stemmed from abuse or neglect by their parents, or other family matters that were before the juvenile court. In addition to their criminal charges, many of the other 163 subjects also had juvenile court records that indicated similar problems.

The inclusion criteria for Study 2 was that the subject had turned 18 by the time of the study. Of the 532 subjects, 430 had turned 18 and were included in Study 2. Of the 430 subjects, 70 had involvement with the Utah Department of Corrections as adults. These subjects comprised 16% of the 430 subjects who were eligible for Study 2.

### **The ARTEC Program**

The ARTEC program includes components of various treatment modalities, including group, individual, and family therapy delivered in a range of settings from outpatient counseling through intensive residential treatment. Subjects in these two studies were involved in the Day Treatment, Residential, and Intensive Residential components of the ARTEC program.

*Treatment Modalities.* Youths in the ARTEC program receive individual, group, and family therapy. Orientations of therapists providing this counseling are varied, including cognitive-behavioral, strategic, process-oriented, and family systems. Group counseling is sometimes provided by para-professional staff. Groups focus on life-skill building and cognitive-behavioral mood management, as well as more traditional process-oriented group psychotherapy provided by a licensed professional.

The theoretical foundation of the ARTEC Day Treatment and Residential programs is behavioral, specifically oriented toward operant conditioning. Behavior-shaping tools include the use of positive and negative reinforcement to increase the use of adaptive behaviors, and correspondingly, the use of punishment and response-cost to decrease the repetition of inappropriate behaviors.

*Treatment Settings.* Clients in the day-treatment setting receive educational services from the local school district on the ARTEC campus. These clients also receive psychotherapy and therapeutic recreation services. Day-treatment services are offered only on weekdays and the clients return home to natural or foster parents at the end of the day.

In the residential setting, youths attend school with the day-treatment clients, and receive services similar to those of the day-treatment program. Residential clients live on the campus in one of five group homes which have 24-hour continuous staff supervision at a 1:5 staff-to-client ratio. Group homes may have up to 12 residents, and residential clients are differentially placed by gender, intellect, and social development.

The intensive residential program differs because clients reside in a secure building where the staff-to-client ratio is 1:3. Intensive residential clients receive educational and therapeutic services inside the secure buildings. Residential and day-treatment clients have the opportunity for recreational experiences in the community; intensive residential clients do not.

## STUDY 1

### Method

*Design.* This study addressed three questions: (1) How much reduction in rates of criminal charges occurred after treatment? (2) Was there a difference between residential treatment, day treatment, and a combination of residential and day treatment in achieving this reduction? (3) What was

the contribution of different treatment modalities, including individual, group, and family therapy in predicting this reduction?

These three questions were addressed in the following ways. Question 1 examined pre- to posttreatment changes in the rates of juvenile criminal charges. Question 2 was addressed by examining the differences between residential and day-treatment settings in the change of criminal charge rates. Finally, the relationship between treatment modalities and the pre- to posttreatment change in rates of criminal charges was inspected.

*Subjects.* Of 532 subjects within the total pool, 43% ( $N = 227$ ) had records with the Utah juvenile court, and therefore could be used to answer Questions 1 and 2. Clients with no record in the juvenile court database were excluded from the study.

Regarding Question 3, of the 227 subjects, 90 had billing records within the VMH database, showing the number of hours spent in individual, group, and family therapy. Results from these 90 subjects answered Question 3. The reduced number of subjects in examining Question 3 resulted from a change in billing practices during the time period of the study. For the first 2 years of the study, hours spent in different treatment modalities were billed simply under the categories of residential or day treatment. During the last 2 years, itemized billing was implemented for individual, group, and family therapy. This change in billing practices made the examination of Question 3 possible, but resulted in data availability for only 90 subjects.

*Data Collection.* Data were analyzed from the 227 subjects described. The amount of time prior to treatment and between discharge from treatment and data collection varied between subjects. Therefore, a three-step procedure was used to account for these individual variations in the pretreatment and follow-up periods. First, the number of days between the date of the first criminal charge entered in the youth's juvenile court record and the beginning date of treatment services was counted. Second, this number was divided by 90, to reflect the number of quarter years in the pretreatment period. Third, the number of quarter years in the subject's pretreatment period was divided into the number of pretreatment criminal charges a subject had on his or her juvenile court record, providing an average quarterly rate of offenses (QRO).

An identical procedure was applied for posttreatment charges, except that the number of days elapsed between the date of discharge from

treatment and May 1, 1996 was divided by 90 to establish the number of quarter years in the posttreatment period. This procedure resulted in establishing a quarterly rate for pretreatment (QRO-pre) and post-treatment (QRO-post) offenses.

## Results

The number of days following treatment varied among clients, from 60 to 2286 days (a range of 2226 days). The mean number of days in the follow-up period was  $M = 888.78$ ,  $SD = 416.82$ . Of the 227 subjects, 163 had been charged with criminal offenses prior to receiving treatment. Of these 163 subjects, 40 (24%) had no criminal charges filed against them subsequent to treatment.

Of 227 subjects, 64 had only family court entries on their juvenile court records at pretreatment. Of the 64 subjects with no criminal charges prior to treatment, 23 (35%) received no criminal charges during their posttreatment period. When taken as a whole, regardless of their pretreatment criminal charge status, 63 (28%) subjects out of the 227 in the study received no criminal charges posttreatment, and 164 (72%) subjects received at least one criminal charge posttreatment.

*Pre- to Posttreatment Differences.* In order to refine our understanding of the rates of criminal charges of youths treated at the ARTEC program, the pre- to posttreatment difference in the QRO was examined. It was hypothesized that there would be an observed pretreatment to posttreatment reduction in criminal behavior as measured by the QRO. The mean pretreatment QRO was  $M = 1.4$ ,  $SD = 2.6$ , and the mean posttreatment QRO was  $M = 0.6$ ,  $SD = 0.8$ , a reduction in mean QRO of 59.1%. The hypothesis was tested using the *t*-test for Correlated Means, and the difference between pre- and posttreatment QRO's was significant,  $t(225) = 4.85$ ,  $p < .0001$ , two-tailed.

*Treatment Setting Effects.* The second question focused on the relationship between treatment setting and the pre- to posttreatment reduction in rates of criminal charges. Specifically, the reduction in charge difference between day treatment, residential treatment, and a combination of day and residential treatments was examined.

For subjects receiving day treatment services only, the mean QRO-pre was  $M = 1.4$ ,  $SD = 0.8$ , and the mean QRO-post was  $M = 0.6$ ,  $SD = 0.8$ . For

subjects receiving residential treatment services only, the mean QRO-pre was  $M = 1.3$ ,  $SD = 1.9$ , and the mean QRO-post was  $M = 0.6$ ,  $SD = 0.8$ . For subjects who received a combination of residential and day treatment services, the mean QRO-pre was  $M = 1.7$ ,  $SD = 2.6$ , and the mean QRO-post was  $M = 0.6$ ,  $SD = 0.8$ .

To examine whether significant differences existed between treatment settings, a one-way analysis of variance (ANOVA) was calculated, with treatment setting as the independent variable and the reduction of criminal behavior as the dependent variable. The reduction of criminal behavior was defined as QRO difference, where the QRO-post was subtracted from the QRO-pre for each subject. The ANOVA found no significant differences between treatment settings on QRO difference,  $F(2,225) = 0.28$ ,  $p > 0.05$ .

*Treatment Modality.* The last question of Study 1 had to do with the relationship between time spent in different treatment modalities and the pre- to posttreatment reduction in rates of criminal charges. The number of hours spent in individual, family, and group therapy was obtained for 90 subjects from the Valley Mental Health database. Of these 90 cases, 80 (88.9%) received individual therapy ( $M = 19.8$ ,  $SD = 31.0$  hours), 38 (42.2%) received group therapy ( $M = 10.8$ ,  $SD = 14.9$  hours), and 43 (47.8%) received family therapy ( $M = 12.4$ ,  $SD = 17.6$  hours).

To assess the overlap between subjects' exposure to different treatment modalities, hours spent in each therapeutic modality were correlated. The correlation between hours spent in individual therapy and hours spent in group therapy was  $r(88) = .44$ ,  $p < .05$ . The correlation between hours spent in individual therapy and hours spent in family therapy was  $r(88) = .70$ ,  $p < .05$ , and the correlation between hours spent in group therapy and hours spent in family therapy was  $r(88) = .36$ ,  $p < .05$ . From these correlations, it is apparent that the predictive strength of any single modality must be taken as the strength of that modality in combination with the other two.

Hours of therapy in each modality were correlated with the QRO difference. The correlation between individual therapy and the QRO difference was  $r(88) = .35$ ,  $p < .01$ , the correlation between group therapy and the QRO difference was  $r(88) = .39$ ,  $p < .01$ , and the correlation between family therapy and the QRO difference was  $r(88) = .19$ ,  $p > .05$ .

On the basis of the obtained correlations, individual therapy accounted for 12% of the variance within the QRO difference variable,



whereas group and family therapy accounted for 13.8 and 3.5% of the variance, respectively. A stepwise multiple regression analysis, was employed to test for the significance of the treatment modalities' contribution to QRO difference. Consistent with the correlations previously mentioned, the stepwise regression procedure selected group therapy hours first, individual therapy hours second, and family therapy hours third for entry into the equation. In the full equation, the contributions of group therapy,  $F(1,88) = 15.34$ ,  $p < .0002$ , and individual therapy,  $F(2,87) = 10.1$ ,  $p < .0001$ , were significant. The contribution of family therapy to QRO difference was not statistically significant. This indicates that group and individual therapy hours each made a significant additional contribution when entered into the equation, but that family therapy hours did not.

## STUDY 2

### *Method*

Study 2 addresses the frequency of ARTEC clients' criminal convictions in early adulthood. Study 2 also addresses whether or not the adolescent treatment setting findings of Study 1 continued into adulthood.

*Subjects.* The 430 subjects had to meet the inclusion criterion of being 18 years of age on or before November 7, 1995, for data collection purposes. This additional criterion was necessary to reference subjects within the Utah Department of Corrections (UDC) database on that date.

*Data Collection.* A list of all clients who served in the ARTEC program for the 4 years beginning March 1991 and ending February 1995 was obtained from the VMH client database. All clients listed who became 18 years of age on or before November 7, 1995 were identified; their names were cross-referenced with the Utah Department of Corrections database on that date ( $N = 430$ ). The UDC database listed subjects who were in the custody of the adult corrections system, meaning they had been convicted of crimes as adults, with custody categories ranging from probation to secure confinement.

The UDC database system is driven by custody, resulting from convictions as an adult for charges adjudicated in District Court. The UDC database does not function on charges, as does the Juvenile Court database. Because of problems with linkage points for identifying individuals, the UDC database does not interface well with the District Court's database,

which is driven by incidents rather than individuals. Because the District Court database's linkages use offense numbers rather than coding that identifies individuals, criminal charges for individuals and their dates of occurrence could not be accurately ascertained, as they were within the Juvenile Court database.

*Results.* Of the 430 subjects who met inclusion criteria, 70 had been sentenced to corrections for one or more convictions for crimes as an adult, resulting in the probability of a sentence to corrections of  $p = .16$ . There were 272 subjects meeting inclusion criteria who received residential treatment with or without day treatment, 31 who were in UDC custody, and 241 not in UDC custody, with a resulting custody probability of  $p = .12$ . Of 158 subjects who received only day treatment services, 39 were in UDC custody, with a resulting commitment probability of  $p = .25$ . A chi-square test of association between treatment setting and UDC custody was significant  $\chi^2(N = 430) = 12.94, p < .001$ . This indicates that subjects receiving only day treatment services were twice as likely to be committed to UDC as adults than were subjects who received residential treatment, with or without day treatment.

## DISCUSSION

The results of these two studies reveal three essential findings. First, in Study 1, subjects who received residential and day treatment services demonstrated a reduced amount of criminal charges as juveniles, as measured by the QRO. Second, in Study 1, the hours spent in group and individual therapy significantly predicted the reduction in juvenile criminal charges, whereas the hours spent in family therapy did not. Third, in Study 2, a difference between subjects receiving residential and day treatment services was evident. Day treatment only subjects were twice as likely to have been involved with the adult corrections system.

The first finding is consistent with the idea that treatment services for adolescents are beneficial. The subjects in this report reduced their rates of juvenile criminal charges by nearly two thirds subsequent to receiving services. Although the absence of a control group prevented treatment versus nontreatment comparisons, this finding remains encouraging considering the course of juvenile criminal behavior.

Using information about society in general as a baseline, the late teens and early twenties are the ages during which criminal behavior

typically escalates rather than decreases. This is especially the case for youth who are more severely behaviorally disturbed, those typically served within public residential treatment programs (American Psychiatric Association [APA], 1994; Kaplan & Saddock, 1991). Kaplan and Saddock (1991, p. 528) point to conduct disorder having "a variety of symptoms (which) develop over time until a consistent pattern violates the rights of others." Kaplan and Saddock also posit that youth who "exhibit the greatest number of symptoms, and express them most frequently have the poorest prognoses" (1991, p. 529). On the basis of over a decade of direct experience, the youths treated in the ARTEC program, especially those who have pretreatment criminal charges in their histories, resemble this description of youth with a poor prognosis. Yet, after treatment, subjects in this study show a decreased rate of criminal activity. When one considers the tangible costs of juvenile crime, the reduction found after treatment in this study indicates considerable societal savings. When such savings combine with the improvement in quality of life within a community from reduced crime, the treatment of adolescents with criminal behavior is a powerful option.

In Study 1, there was no significant difference in reduced rates of criminal behavior between day treatment and residential treatment subjects. In contrast, in Study 2, there was a difference between residential and day treatment subjects in long term rates of adult criminality. Specifically, day treatment subjects were twice as likely to enter the adult correctional system. The difference in the findings may be attributed to differences in how criminal behavior is measured in the adult and juvenile justice systems. The adult corrections database is convictions driven, whereas the juvenile court data is focused on criminal charges. It is also possible that therapeutic treatments administered in residential settings are more intense (Moffitt, 1983) and tend to dissipate less over time.

A number of strengths and limitations exist within the two studies. Behavioral outcome was one strength. Rates of criminal activity do not rely on subjects' self-report responses to survey or psychometric instruments, which may be suspect in populations that engage in criminal activity. A second strength is that subjects were not recruited. Because individuals who volunteer to be research participants may be qualitatively different from those who do not, this subject pool is more representative of clients served by the ARTEC program. The use of archival data in this study also

allowed for a longer follow-up period and a larger sample size than is often found in treatment outcome studies. Small sample size has been cited as a limitation to the internal validity of many treatment outcome studies (Kazdin & Bass, 1989).

The major limitation of the current research is that there was no random assignment of subjects to treatment and control groups, thereby limiting the plausibility of causal findings from the data. Because subjects' criminal activities were studied longitudinally without a control group, maturation may have influenced the outcome. As noted previously, maturation is not a compelling confounding factor because the population was at the age when criminal behavior, especially among the more disturbed youths who often find their way into residential treatment centers, typically escalates rather than decreases (APA, 1994; Kaplan & Saddock, 1991).

The absence of a control group also introduces the possibility of historical events and trends influencing the results of the treated group. From February 1991 to May 1996, when these youths were treated and followed up, the historical trend showed increasing rates of juvenile crime in the general population. Following a steady increase, totaling 42% from the 1988 rate, arrests of juveniles decreased by 9% between 1995 and 1996 (Federal Bureau of Investigation [FBI], 1997). In comparison, subjects within this study showed a decrease of 59% in their pre- to posttreatment quarterly charge rates.

Additional internal validity threats remain present, notably subject characteristics and regression to the mean. It is possible that the group of youths treated in the ARTEC program at this time were ready to change their delinquent behaviors, independent of the presence or absence of interventions. It is also possible that the group of youths who participated in this study entered treatment soon before their rates of criminal charges began moving lower, toward the mean rate of their population. The magnitude of the regression threat for juvenile criminal activity has been described as both considerable (Maltz, Gordon, McDowall, & McCleary, 1980) and minimal (Murray & Cox, 1979). The fact remains that these threats are best controlled by the presence of a control group, therefore the results warrant a guarded interpretation.

Although random assignment to treatment and no-treatment control conditions presents an ethical dilemma within a treatment delivery pro-

gram, there are feasible possibilities for future research. A modified version of Study 1 could be conducted. Although basic behavioral treatment at the ARTEC program cannot be withheld, clients could be randomly assigned to different treatment modality conditions. These could include family and individual, family and group, and individual and group therapy conditions. Each client would receive a combination of two treatment modalities; treatment conditions would serve as controls for each other. This would permit more rigorous comparisons between treatments.

The number of hours of group therapy, delivered within a therapeutic milieu including individual therapy, family therapy, and behavioral programming, accounted for nearly 14% of the variance within the pre- to postdifference in rates of criminal charges. The number of hours of individual therapy accounted for nearly as much (12%) of the variance. Much of the variance accounted for by these two modalities is, of course, shared. Elements of each modality may help explain why both modalities were significant predictors of outcome.

Regarding the individual modality, there are aspects of both behavioral and cognitive approaches that may explain the findings. The use of behavioral approaches with conduct disordered children and adolescents appear to be most effective when individualized (Kazdin, 1984), because reinforcers and punishers are most usefully defined through their effects on an individual's behavior. These effects are often idiosyncratic to individuals.

Samenow (1984) also states that cognitive therapy aimed at correcting distorted criminal thinking patterns is most effective in the individual therapy modality. Samenow's work identifies criminal thinking errors commonly found in clinical work with antisocial individuals. Nonetheless he remains steadfast in his position that these thinking errors manifest themselves in ways peculiar to individuals, and that individual therapy is necessary to alter these distortions.

Turning to elements of the group modality, group therapy proves a potent modality for treating adolescents with depression (Clarke & Lewinsohn, 1989), anxiety (Wessel & Mersch, 1994), and aggressive behavior problems (Larson, 1992; Wilcox & Dowrick, 1992). Group modalities have been effectively used to treat a variety of problems for a broad sampling of adolescents. Some of the predictive power of group therapy in the context of the larger therapeutic program at

ARTEC may be related to the uniqueness of the group process as a therapeutic modality.

In group psychotherapy, therapists are encouraged to view themselves as a member, as well as a leader, of the group (Yalom, 1985). This shared power is an underlying process unique to the group therapy approach. The processes underlying group therapy may allow adolescents to express feelings and thoughts, which may be explored and more thoroughly followed (Mindell, 1995). The resulting elaboration of the adolescents' expression may limit future violent or criminal expression.

In addition to the appeal that shared power may hold for many adolescents, adolescents may be developmentally ripe to benefit from groups. Erik Erikson (1968) writes of adolescence as a time when youths begin to leave behind the egocentrism of childhood and begin to focus on their role within groups. Erikson also posits that in the search for one's identity during adolescence, the peer group supplants the family as a source of feedback and validation for the emerging identity. The combination of guided peer influence in the context of safe shared power may be an underlying element of group therapy's benefit for clients of the ARTEC program.

These two studies, like most research conducted in natural settings, have strengths and weaknesses. They were a collaborative effort between academic researchers and clinical practitioners and were specifically funded by the Utah State Division of Mental Health to foster such collaboration. The data used were archival, making them vulnerable to the vicissitudes of record keeping practices, and the studies lacked the rigors of formal experimental designs. Despite these limitations, it is important to study the relationship between the kinds of therapeutic components that occur naturally in actual institutions and the results of treatment in these programs. It is similarly important to use societally valued measures of outcome that are clearly related to behavior.

It is hoped that this report will serve to stimulate further research on the outcomes of existing treatment services for adolescents. Continuing investigations in this area can serve to benefit communities through reduced crime, and individual youths through an improved quality of life. This is especially so in light of the current studies, which point toward the potential for benefits to both the individual and society.

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